

Rural District of Louth.

Annual Report

OF THE

Medical Officer of Health

FOR

The Year 1949.

PRINTED BY
T. E. WIGGEN AND SON, LTD.
"THE PRINTERIES"
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To the Chairman and Members of the Louth Rural District Council.

MR. CHAIRMAN, LADIES AND GENTLEMEN,

I have pleasure in presenting my Annual Report on the health and sanitary conditions of the district for the year 1949 as prescribed.

The health and welfare of the community as reflected in the statistics for the year were exceedingly satisfactory. The vital statistic rates are favourable when viewed comparatively with the national rate for the year and with our local figures for recent years. Noticeable among the improvements was the death rate for infants under one year which was 3 compared with the average for the district during the preceding ten years of 39. The only heading showing an increase in the individual causes of death was "heart disease" which was found to be almost the equivalent of old age causation. The deaths after the age of 65 years accounted for 72% of the total. This is the first time since the war that allowances were made for the age group constitution of the local population to provide a more accurate comparison of our general death rate with the national figure. It would be unwise to attribute the particular or general improvements to changes in circumstances affecting them or to regard them as providing grounds for future optimism.

There were no unusual features about the infectious disease cases which will be seen in truer perspective when compared with the national figures on a case-rate basis.

Active consideration and attention, within practical limits, were given to the district water supplies. The number of samples examined gives some indication of the increase of purposeful work done by the Sanitary Inspectors in this field and the degree of supervision now required compared with our commitments only a couple of years ago. Matters affecting sewerage advanced little in the scheme sense, but satisfactory supervision was given to existing conditions. The success of the day to day routine can usually be measured by the figures recorded under the unpretentious heading of "Nuisances." The number of abatements was double the previous year, and even more impressive of zealous effort, were the increased numbers of these reported to the Council for action.

To my mind compared with other years, the most outstanding feature under the Housing head was the marked increase in the remedy of defects found in dwellings, which probably represented maximal results in the face of the restricting influences affecting work of this kind. The overcrowding figures reported or discovered during the year were not at all serious.

Our milk problems of rather unhappy memory, were largely liquidated when towards the end of the year supervision over the production side was transferred to the Ministry of Agriculture,

thus limiting our future obligations to the supervision of distribution methods. Partly as an amende honorable for past omissions and partly to obtain a useful background for the better understanding of the altered field of our responsibility, much time and care were devoted to the completion of an informative register of cow keepers in the whole district to serve as a reliable guide for the new authority. More than thrice the number of samples of ice cream were sent for examination as in the preceding year and the result of these revealed the very satisfactory hygienic standard of the local production. Less favourable general results were obtained from the retail traders, whose supplies came from outside sources, in spite of the most ardent efforts to overcome the difficulties inherent in the divided responsibility. The Sanitary Inspectors were satisfied with the hygienic standards observed by the retailers. Other premises connected with food and catering were given their share of supervision.

The Council by adopting the Model Bye-laws of the Ministry of Food Series 1 proved its anxiety to further the cleaner food campaign. When these Bye-laws become operative, it is hoped the public will not seek to evade its responsibility by reporting every trivial complaint to an overtaxed sanitary staff instead of directing it to the offending source. Rationing and regimentation seem to have stilled the voice of complaint except in the presence of the unfortunate public officials.

Summarising, I consider we have every reason to be satisfied with the progress made in matters affecting public health during 1949. The sanitary department, for the first time working with adequate staff and no longer entangled with special commitments, was able to devote attention to the ordinary routine duties. The result of the enthusiastic efforts of both staff and field work was reflected in vastly improved supervision of services which was a matter for congratulation.

I take the privilege of expressing my gratitude to the Chairman and Members of the Public Health Committee for their continued unstinted help and consideration during the year. I also wish to thank the Chief Sanitary Inspector and the Clerk for their valued co-operation, as well as my indebtedness to Mr. Shone for supplying the relevant subject matter included in this report.

I remain,

Yours faithfully,

W. J. KERRIGAN,

Louth: July 1950.

Medical Officer of Health.

LOUTH RURAL DISTRICT.

Annual Report on the Health and Sanitary Conditions for the Year 1949.

Public Health Officers :

Medical Officer of Health :

W. J. KERRIGAN, M.B., B.Ch., B.A.O., L.M., D.P.H.

Chief Sanitary Inspector and Building Surveyor :

S. SHONE, A.R., San. I.

Additional Sanitary Inspector and Assistant Building Surveyor :

J. P. SMITH, A.R., San. I.

Additional Sanitary Inspector :

P. CHILDS, A.R., San. I.

Additional Sanitary Inspector :

W. W. SUMMERS. Appointed from 18th March, 1949.

Milk and Dairies Inspector (Part Time) :

A. H. ADAMS, M.R.C.V.S. Resigned 31st March, 1949.

SECTION A

Social Conditions and General Statistics.

Area of Rural District in acres	...	...	153,129
Registrar General's estimate of Resident Population			
	Civilian	...	17,260
	Total	...	18,620
Density of Population per acre	...	...	0.12
Number of Inhabited Houses at end of 1949	...	...	5,227
Rateable Value of Inhabited Houses	...	...	£34,382
Product of Penny Rate	...	...	£223

VITAL STATISTICS.

(Note — Figures in brackets show corresponding rates for
England and Wales).

Births

(a)	LIVE		Total	Male	Female
	Legitimate	...	337	162	175
	Illegitimate	...	15	10	5
			<hr/> 352	<hr/> 172	<hr/> 180
(b)	STILL				
	Legitimate	...	7	5	2
	Illegitimate	...	—	—	—
			<hr/> 7	<hr/> 5	<hr/> 2

Live Birth Rate per 1,000 of estimated civilian population	20.4 (16.7)
Still Birth Rate per 1,000 of estimated civilian population	0.41 (0.39)
Still Birth Rate per 1,000 of total births	19.5

Deaths	Total	Male	Female
	224	105	119

Death Rate per 1,000 of estimated civilian population	13.0
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Comparative Death Rate per 1,000 of estimated civilian population (Comparability Factor 0.79)	10.3 (11.7)
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Deaths from maternal causes	Nil
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Deaths of Infants under one year of age :

	Male	Female
Legitimate	—	1
Illegitimate	—	—

Death Rate of Infants under one year per 1,000 live births :	3(32)
--	-------

Ages at Death

Ages in Years	0	1	1/5	5/15	15/25	25/35	35/45	45/55	55/65	65/75	75+	Total
Deaths	1	—	2	2	5	5	5	12	30	62	100	224

Cancer Deaths

Ages in Years	Under 40	40/45	45/50	50/55	55/60	60/65	65/70	70/75	75+	Total
Case Rate	1	1	1	1	2	4	4	5	10	29

Causes of Death

	Males	Females
1. Tuberculosis of Respiratory System	1	1
2. Syphilitic diseases	1	—
3. Influenza	3	6
4. Cancer of buccal cavity and oesophagus (male) and uterus (female)	2	—
5. Cancer of stomach and duodenum	5	1
6. Cancer of breast	—	1
7. Cancer of all other sites	10	10
8. Diabetes	—	5
9. Intra cranial vascular lesions	6	17
10. Heart diseases	39	37

11.	Other diseases of circulatory system	4	5
12.	Bronchitis	4	6
13.	Pneumonia	7	6
14.	Other respiratory diseases	1	1
15.	Other digestive diseases	1	1
16.	Nephritis	1	—
17.	Congenital malformation, birth injury, infantile diseases	—	1
18.	Suicide	1	1
19.	Road traffic accidents...	1	—
20.	Other violent causes	2	2
21.	All other causes	16	18
Totals		105	119

SECTION B

General Provisions of Health Services of the Area.

(a) Laboratory Facilities.

As in other years the Public Health Laboratory, Lincoln, carried out all the bacteriological examinations required, without charge, and provided a very helpful service. Chemical analyses required were done by a public analyst at a prescribed charge.

(b) Ambulance Facilities.

No complaints were known regarding the operation of the arrangements made available by the County Council the previous year. They appeared to work excellently, except that many considered the district was "over ambulanced" in the sense of abuse of privilege rather than that the provisions were in excess of requirements.

(c) Nursing in the Home.

The full complement of nurses was available under the County Council administrative scheme to conduct the appropriate duties in the ten districts into which our area is divided for this purpose. Some idea of the work done by the nurses can be gleaned from the following information kindly supplied to me by the County Medical Officer of Health.

Total number of cases dealt with	659
Total number of these under midwifery maternity heading	195
Total number of visits paid	16,414

(d) Treatment Centres, Clinics and Hospital.

There is nothing to record relative to extension of services under this head.

SECTION C

Sanitary Circumstances in the Area.

Water Supply.

The table below gives the result of the bacteriological examination of the samples taken during the year.

Source	No. of samples	Satisfactory	Doubtful	Total unsatisfactory	Evidence of faecal pollution
1. Public Supplies :					
(a) Binbrook	11	11	—	—	—
(b) Grimoldby and Manby	12	12	—	—	—
(c) Holton-le-Clay	14	13	1	—	—
(d) Beesby	14	9	2	3	—
(e) Stewton	26	11	4	11	—
(f) Donington-on-Bain	17	12	—	5	2
(g) Ludford	5	5	—	—	—
2. Council Housing Estates	21	11	4	6	1
3. Farms (C.A.E.C.)	34	16	2	16	10
4. Private Supplies :					
(a) Villages communal (for more than two)	29	7	2	20	15
(b) Single households	26	9	—	17	12
Totals	209	116	15	78	40

Chemical analyses—Public supplies 11, referring to three samples from the Grimoldby and Binbrook supplies and two from Donington-on-Bain. Three related to the trial bore at Fulstow.

Two points immediately attract attention on looking at this table—first the large number of samples examined and second the unusually large number from the public supplies recorded as unsatisfactory. This latter point requires explanation to get the facts in proper focus. In the case of the Beesby and Stewton supplies it was found at one period of the year that there was insufficient circulation of the water in the mains which tended to produce stagnation at the terminals. All the inferior samples were taken at the time of this investigation and there was no recurrence following regular weekly flushing of mains. The trouble in the Donington-on-Bain supply involved the more serious question of shortage following the abnormal period of drought, which reduced the volume at source to danger levels. A temporary system of water carriage had to be provided to

meet the village needs until rainfall restored the depletion. I was recently asked by a member of the public why we wasted time examining water from established and proven sources. Examples like these, even in their small way, supply the answer and the deed for vigilant supervision.

It requires to be pointed out also that five out of the six unsatisfactory results from the Council housing provisions were all from one trial source.

The picture is different when the private supplies are considered. Here, as often as not, we are faced with a supply subject to a permanent source of pollution which involves a potential health risk. The samples referred to under head 4a above were taken in various parts of the district from village communal and school supplies, but the bulk of them was concerned with special investigations. Most of the samples in the 4b group were requests from individual householders who are becoming increasingly concerned about the use of this diluted sewage from the garden well for their domestic needs.

It must not be thought that academic interest is the motivating force in sample taking. During the year, the results of samples decided the Council to take immediate steps to hasten an extension supply to South Willingham village. In other villages, sample results in many cases decided property owners to connect to the existing public mains, houses which had previously been regarded as adequately served. In Binbrook, for instance, all except a couple of the village houses are now on the public supply. We had also the instance of discovering a gross pollution in part, at least of a village piped supply, privately sponsored, by chance sample taking. This matter was receiving anxious attention at the end of the year. Unfortunately, in many instances referable to individual houses, circumstances permitted of nothing except closing the wells as polluted or the issuing of warning notices to boil the water before use. Such actions were by no means negative when considered as safety measures. It has surprised me to find that so many of the younger generation in the district boil the drinking water from their private supplies as a routine matter.

As indicated in my report of the previous year, the Council continued to pursue the policy of exploring possibilities of meeting the water needs of villages capable of being supplied by extension from existing resources, while keeping within the framework of the area schemes. As a result, considerations affecting the following villages had advanced to points which gave promise of early provisions. The Ministry had approved the tender for the extension of the supply from Holton-le-Clay to Tetney, North Thoresby, Grainsby and Waithe. Approval in principle from the Ministry was obtained to service the villages

of Saleby and Thoresthorpe from the Beesby supply, and South Willingham from Ludford.

In addition, a bore was sunk at Fulstow with the object of determining the quality and volume of the water to serve as the proposed source of supply from the northern area. Both of these factors were satisfied following laboratory examinations of the water and the pumping tests relating to output.

The following gives a summary of other information coming under this Head:—

Number of houses connected to the Councils mains	
during the year	26
Bores sunk	31
(a) Council housing sites	10
(b) C.A.E.C.	21
Wells closed as polluted	15

Drainage and Sewage

Closets.

Number of houses with privy vaults in district	897
Number of houses with pail closets in district	2,860
Number of pail closets repaired	Nil
Number of water-closets substituted for dry receptacles	19
Number of houses with water-closets in district	1,593
Number of water-closets repaired	7

Drains.

Drains examined, tested, exposed, etc.	106
Drains unstopped, repaired, etc.	29
Waste pipes, disconnected, repaired, etc.	Nil
Existing soil pipes, etc., renewed or repaired	Nil

Sewers.

New lengths of sewer laid	Nil
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A Public inquiry was held into the question of sewerage Binbrook village which is already provided with sewage disposal works capable of taking the extra load. The matter still remained under discussion at the year's end.

Sewage Disposal Works.

These were reported as functioning satisfactorily, confirmation of which was supplied from the reports of the analysis of the effluents done twice yearly.

The Surveyor reported that no repairs were done or needed during the year other than the cleaning of the Binbrook filter beds.

Refuse Collection.

This service extended according to schedule to include a further 24 parishes in the fortnightly collection which resulted in 41 out of the total parishes being serviced at end of

the year. With the expected delivery of a second modern refuse vehicle the inclusion of further parishes was anticipated.

The final disposal of the refuse is by controlled tipping.

Disinfection.

Rooms disinfected	...	...	...	19
(a) Ordinary infectious disease	...	...	...	11
(b) Tuberculosis	...	...	...	8
Rooms stripped and cleansed	...	...	...	2
Number of premises disinfected	...	...	...	18

Nuisances.

Total number of nuisances during the year :— .

(1) Abated as result of informal action by Sanitary Inspector.	91
(2) Reported to the Council :	
(a) Statutory Notice issued	4
(b) Statutory Notice not issued	17

Offensive Trades.

(a) Number of premises in district	...	...	5
(b) Number of Inspections	...	...	16
(c) Contraventions of bye-laws	...	...	Nil
(d) Contraventions remedied	...	...	Nil

Shops Act 1934.

(a) Number of shops inspected	...	...	88
(b) Contraventions remedied	...	...	4

Factories and Workshops Act 1937.

(a) Visits made	...	...	...	75
(b) Infringements discovered	...	...	...	6
(c) Infringements remedied	...	...	...	6

SECTION D

Housing.

Total number of new Houses erected during the year :—79

(1) By the Local Authority	...	...	...	62
(2) By private enterprise	...	...	...	17

(1) Inspections of Dwelling Houses during the year :—

(1) (a) Total number of dwelling-houses inspected for housing defects (under Public Health or Housing Acts)	...	...	...	470
(b) Number of inspections made for the purpose				684
(2) Number of dwelling-houses (included under sub-head (1) above) which were inspected and recorded under the Housing Consolidated Regulations, 1925	...	...	...	Nil

(3)	Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation	...	...	...	4
(4)	Number of dwelling-houses (exclusive of those referred to under the preceding sub-head) found not to be in all respects reasonably fit for human habitation	...	...	...	97
2.	Remedy of Defects during the year without service of formal notices :—				
	Number of defective dwelling-houses rendered fit in consequence of informal action by the Local Authority of their Officers	..	...	...	73
3.	Action under Statutory Powers during the year :—				
(a)	Proceedings under Sections 9, 10 and 36 of the Housing Act 1936	...	...	...
(1)	Number of dwelling-houses in respect of which notices were served requiring repairs				2
(2)	Number of dwelling-houses [which were rendered fit after service of formal notices :—				
(a)	by owners	...	...	...	2
(b)	by Local Authority in default of owners				Nil
(b)	Proceedings under Public Health Acts			...	
(1)	Number of dwelling houses in respect of which notices were served requiring defects to be remedied	...	...	...	5
(2)	Number of dwelling-houses in which defects were remedied after service of formal notices :—				
(a)	by owners	...	...	..	4
(b)	By Local Authority in default of owners				Nil
(c)	Proceedings under sections 11 and 13 of the Housing Act, 1936 :—				Nil
(d)	Proceedings under section 12 of the Housing Act, 1936	...	...	...	Nil
4.	Housing Act, 1936—Part IV—Overcrowding.				
(a)	(1) Number of dwellings overcrowded at end of the year	...	...	not known	
	(2) Number of families dwelling therein		„	„	
	(3) Number of persons dwelling therein		„	„	
(b)	Number of new cases of overcrowding reported during the year	...	...	...	4
(c)	(1) Number of cases of overcrowding relieved during the year	..	...	...	2

(2)	Number of persons concerned in such cases	19
(d)	Number of houses again overcrowded after being previously relieved	Nil

5. Movable Dwellings, Tents, Vans, etc.

(a)	Number of site licences	1
(b)	Number of individual licences	10
(c)	Number inspected during the year	41
(d)	Number of contraventions remedied	12

62 Council brick houses, all of three bedroom type, were finished during the year and the 17 privately built varied in the type of accommodation. A further 40 Council and 13 private houses were reported to have been in the course of construction.

It is pleasing to note the vast improvement this year in the relationship between housing defects found and the number of these remedied. Previously, time devoted to housing matters was so fully absorbed by the Rural Housing Survey that there was little time to give attention to repair work except the urgencies following complaints.

The Surveyor has pointed out the difficulties getting repair work done, chiefly on account of the relation of rentals to the cost of repairs, and to some extent, because of the limits set by the building licensing ceiling. The latter factor practically rules out any intensive effort based on an organised programme. The housing survey showed us how low the rentals were compared with a similar type of property in towns, and unfortunately, the same disparity does not exist in repair costs.

Squatters Camps.

In the Louth Park camp, ten huts were demolished as they became vacant through rehousing, or by the tenants leaving the district. There are still about nineteen families occupying huts on this site, nine families at Holton-le-Clay and one at the Ludford site.

SECTION E

Inspection and Supervision of Food.

Bakehouses.

Number in District : 13.
 Number of Inspections : 27.
 Number of Contraventions : 6
 Defects remedied ; 6.

Slaughter Houses.

Slaughtering for trade purposes of animals for human consumption is done outside the district at the Ministry centres in Louth and Grimsby. One premises in the district is registered for horse slaughter but the meat is not sold for human consumption.

Dairies and Milk Shops.

- Number on Register : 78.
- Pasteurizing Licences : Nil.
- Number of Inspections : 80.
- Contraventions remedied : 1.

Milk.

Matters under this head were mainly concerned with obtaining an up-to-date classified register of all the cow keepers in the district to hand over to the Ministry of Agriculture and Fisheries when it assumed responsibility over the production side from 1-10-49. Much time and effort were devoted to this valedictory gesture so as to make available complete and reliable information about the production position in the district. It was ascertained that there were 10 T.T. producers : 17 accredited and 380 non designated. Some samples were taken from the non designated producers, more with the idea of obtaining a cross section of the hygienic standard than of expecting to effect improvement in the limited time. The results of these are given below, as well as those taken by the County Council relating to the designated categories. It is only fair to add that the non designated samples were taken in the summer months when unfavourable results are more likely. This is evident in the case of the designated samples, where 15 out of the 19 unsatisfactory were summer month samples.

Type	Satisfactory	Unsatisfactory
Tuberculin Tested	23	8
Accredited	40	11
Non designated	29	13

It is ascertained that at least 50% of the total milk consumed in the district is heat treated, and the figure is likely to increase as this type becomes more readily available in the villages.

Ice Cream.

We had a similar number of producer-retailers as the previous year but the number of premises registered for sale only was increased to 13. There were 124 samples taken for examination regarding cleanliness of the product—compared with 34 in preceding year—and 19 for estimation of fat content. The grade assessment is concerned with the individual producer, who over a six monthly period, is expected to have 50% of his samples placed in Grade 1, 80% in Grades 1 or 2 and none in Grade 4. This criterion cannot be applied to retailers who, as here, sell ice cream manufactured outside the district. The results below show the excellence of the local production on the hygienic level and all the producers except F, who is a borderliner, conformed easily to the required demands.

		Grades			
		1	2	3	4
(1)	Producer-retailers :				
	Samples from A	7	1	—	—
	" " B	12	—	—	1
	" " C	4	2	—	—
	" " D	11	—	1	—
	" " E	6	4	—	—
	" " F	6	2	3	—
(2)	Retailers :	32	9	20	3
		78	18	24	4

Every effort was made by the Sanitary Inspectors by strict supervision to improve the retail methods. This was assisted by informing the outside producer and the M.O.H. concerned, about the sample results to ensure investigation at the producer end when this was necessary.

Model Bye-Laws.

The Council decided to adopt the Model Bye-laws Series 1 of the Ministry of Food, relating to the handling, wrapping and delivery of food and the sale of food in the open air. No time was lost in making application for the necessary sanction to have them put into operation.

SECTION F

Prevalence of and Control Over, Infectious and other Diseases.

Infectious Diseases other than Tuberculosis notified during 1949, excluding Service Cases,

Disease	Total Cases Notified	Cases admitted to Hospital	Case Rates per 1,000 of civilian population
Chicken Pox	65	—	3.77 (—)
Measles	128	—	7.42 (8.95)
Pneumonia	10	—	0.58 (0.80)
Diphtheria	—	—	0.00 (0.04)
Malaria B.T.	3	—	—
Poliomyelitis	3	3	0.17 (0.13)
Whooping Cough	39	—	2.26 (2.39)
Scarlet Fever	8	3	0.46 (1.63)
Erysipelas	5	—	0.29 (0.19)
Other cases revised diagnosis	1	1	—
Totals	262	7	—

(The bracket figures show the rates for the whole country).

There were no deaths from infectious diseases.

As in the previous year, notifications for measles, chicken pox and whooping cough feature largely in the above totals. The measles cases were a continuation of the 1948 outbreak which lasted for the first quarter of the year affecting the North East part of the district, with a reappearance in the last quarter in Binbrook area. North Thoresby and the immediate villages were affected by the whooping cough outbreak in the second half of the year. The chicken pox centred largely in the North East villages.

The poliomyelitis cases occurred at such wide intervals as January, August and October in respect of cases aged 14, 30 and $1\frac{3}{4}$ years.

DIPHTHERIA IMMUNISATION.

Number of primary immunisations done 1949.

(a)	1 to 4 years inclusive	..	...	140
(b)	5 to 14 years inclusive	...	...	34
	Booster treatments	...	...	184

These totals do not include cases done privately.

The following gives a brief summary of the result of surveys of individual schools in the District on information kindly supplied by the Head Teachers.

Percentage Immunised	100	100/95	95/90	90/85	85/80	80/75	Under 75
No. of Schools in category	6	4	8	7	5	2	1

The average percentage of children immunised between the ages 5—14 years inclusive from the above information is shown to be 87%.

Vaccinations.

I am indebted to the County Medical Officer of Health for the return below of the total vaccinations, relating to Rural District residents under particular age groups.

Ages	Under 1 year	1-4 years	5-14	15+	Total
Primary Vaccinations	21	12	2	4	39
Revaccinations	—	1	1	3	5

Tuberculosis : New Cases and Mortality during 1949.

Age Periods (years)			New Cases				Deaths			
			Respiratory		Non-Respiratory		Respiratory		Non-Respiratory	
			M	F.	M.	F.	M.	F.	M.	F.
0	...	...						
1	...	...						
5	...	...						
15	...	...	1	1	1			1		
25	...	...	1			1				
35	...	...	2							
45	...	...	1	1						
55	...	...			1					
65+	...	...	1				1			
Totals			6	2	2	1	1	1	—	—

There were three transfer respiratory cases in addition to above.

Appendix. 1.

Chemical Analysis.

W. W. TAYLOR

1, Regent Street,
Nottingham.

20th July, 1949.

Report of Analysis of Waters.

Received 12th July, 1949, from Louth Rural District Council.

Mark: Grimoldby, Binbrook and Donington-on-Bain waters.

These samples contain per 100,000 parts:—

	Grimoldby	Binbrook	Donington
Total Solids dried @ 180° C.	310.00	360.00	360.00
Suspended Matter	absent	absent	absent
Chlorides as Chlorine	17.80	17.80	17.80
Oxidised Nitrogen as Nitrate	absent	2.40	2.00
Oxidised Nitrogen as Nitrite	absent	0.0020	0.0015
Free Ammonia	0.375	0.0040	0.0040
Albumenoid Ammonia	0.004	0.0040	0.0040
Temporary Hardness	180.00	150.00	135.00
Permanent Hardness	0.00	75.00	100.00
Oxygen Absorbed in 4 hrs. @ 80°F. from N/80 KMnO ₄	0.00	0.00	0.00
pH. Value	7.90	7.10	7.90

At the time of sampling these waters were of suitable chemical quality for human consumption, domestic use and dairy purposes, provided that recent bacteriological examinations have proved satisfactory.

W. W. TAYLOR.

Appendix. 2.

W. W. TAYLOR

1, Regent Street,
Nottingham.

20th July, 1949.

Report of Analysis of Sewage Effluent.

Received 12th July, 1949, from Louth Rural District Council.

Mark: Binbrook Sewage Effluent and Manby Sewage Effluent.

These effluents contain per 100,000 parts:—

	Binbrook	Manby
Total Solids dried at 100°C.	66.00	70.00
Suspended Matter	2.40	1.60
Chlorides as chlorine	6.39	8.16
Nitrate as Nitrogen	0.74	0.64

Nitrite as Nitrogen	0.0004	0.0350
Free Ammonia	0.0096	0.1284
Albumenoid Ammonia	0.0800	0.0680
Oxygen absorbed from N/80 KMnO ₄ in		
(a) 3 minutes	0.26	0.26
(b) 4 hours @ 80°F.	0.84	1.02
pH value	7.10	7.70
5 days Biological Oxygen Demand at 65°F	0.90	1.79
5 days Incubation Test at 80°F.	Stable	Stable

These sewage effluents satisfy all the accepted standards of purity for an effluent suitable for free discharge into inland waters and can be regarded as of satisfactory chemical quality.

W. W. TAYLOR.

